

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-021789

(43)Date of publication of application : 21.01.2000

(51)Int.Cl.

H01L 21/205

H01L 33/00

H01S 5/323

(21)Application number : 10-256088

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(22)Date of filing : 27.08.1998

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(30)Priority

Priority number : 09234884
10050773Priority date : 29.08.1997
03.03.1998

Priority country : JP

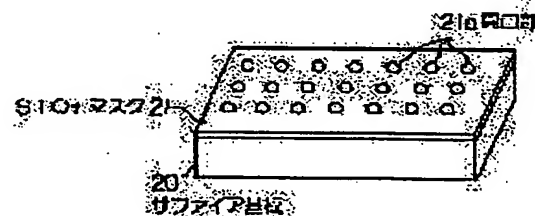
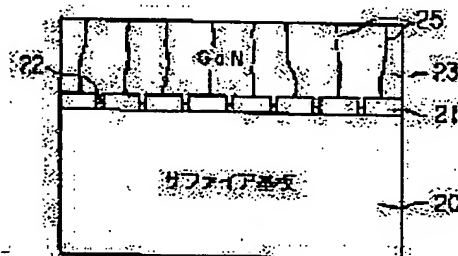
JP

(54) NITRIDE SEMICONDUCTOR ELEMENT, LIGHT EMITTING ELEMENT AND THEIR MANUFACTURE

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce the crystal defect density of dislocations, laminate defects, defective tubular holes, etc., by forming a desired element structure on a nitride compd. semiconductor layer involving a first region having vertically extending through-dislocations and second region released from the dislocation, other than the center part.

SOLUTION: On a sapphire substrate 20, an SiO₂ mask 21 having openings 21a of 2 μm in diameter at spacings of 10 μm is formed, the sapphire substrate 20 with the mask 21 is introduced in a region chamber of an MCV apparatus, then thermally cleaning is made to remove moisture and natural oxide film, a GaN buffer layer 22 is formed on the sapphire substrate 20 with the mask 21, and the substrate temp. is raised after growing the buffer layer 22 to form a GaN layer 23. From the sectional TEM observation, the through-dislocations 25 locate only approximately at a central part of the SiO₂ mask 21 and the crystal defect little exists at other parts.



LEGAL STATUS

[Date of request for examination]

07.03.2001

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]